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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Plan | | Do | | Review |  | Plan | | Do | | Review |
| EYFS | Observing over time | I am curious about things that change  With help I ask questions about things changing  I talk about my ideas for finding out how things change | | I use all my senses to observe changes  I look closely at how things change  I make simple records of how things change (with help where necessary)  I use simple equipment to observe and record changes | | I talk about what I have done and what I noticed | Key Stage 1 | I ask questions about how and why things change  With help, I identify changes to observe and measure and suggest how to do it | | I use non-standard units and simple equipment to record changes  I record in words or pictures, or in simple prepared formats such as tables and charts | | I identify simple changes and talk about them  I sequence the changes  I begin to use scientific language to talk about changes  I talk about whether the change was what I expected |
| Identifying and classifying | I am curious about similarities and differences  With help I ask questions about similarities and differences  I talk about my ideas for sorting or matching things | | I use my senses to sort and match things  I match things that are the same  I find things that are similar or different  I sort or group things in my own way  I use simple equipment to help me sort things (e.g. boxes, hoops) | | I talk about how I sorted or matched things | I ask questions about how and why things are similar or different  I decide what to observe to identify or sort things | | I make comparisons between simple features of objects, materials or living things  I record my observations in words or pictures or simple tables  I sort objects by observable and behavioural features  I record my sorting in sorting circles or tables | | I identify similarities and differences and talk about them  I begin to use scientific language to talk about how things are similar or different  I try to use my records to help sort or identify other things |
| Pattern seeking | I am curious about patterns  With help I ask questions about patterns  I talk about my ideas for finding out about patterns | | I use my sense to look closely for patterns  I observe more than one thing at a time  I make simple records of what I notice (with help where necessary)  I use simple equipment to observe and record patterns | | I talk about what I have done and the patterns I noticed | I ask questions about why and how things are linked  With help I decide what patterns to observe and measure and suggest how to do it | | I use non-standard units and simple equipment to record events that night be related  I record in words or pictures, or in simple prepared formats such as tables, tally charts and maps | | I identify simple patterns and talk about them  I make links between two sets of observations  I begin to use scientific language to talk about patterns  I talk about whether the pattern was what I expected |
| Research | I am curious about things in my surroundings  With help, I ask questions that I can answer using secondary sources | | I listen carefully  I know that information in books and electronic media can be used to answer questions  I find pictures of things  I talk to people about what they do and how things work | | I talk about things I found out | I ask questions about how things are and the way they work  With help, I make suggestions about how to find things out | | I use simple books and electronic media to find things out  I ask questions to find out what people do and how things work  I record in words and pictures what I found out | | I begin to use scientific language to talk about what I found out  I talk about whether the information source was useful  I give an opinion about some things I found out |
| Fair test | I am curious about how things behave  With help, I ask questions about things I can test  I talk about my ideas for testing how things behave | | I use my senses to look closely at how things behave  I carry out simple tests  I make simple records of what I notice (with help where necessary)  I use simple equipment to observe and record | | I talk about what I have done and what I noticed  I talk about whether something makes a difference | I ask questions about why and how  With help, I notice links between cause and effect  With help, I identify simple variables to change and measure  I plan simple comparative tests | | I use non-standard units and simple equipment to record data  I record in word or pictures, or in simple prepared formats such as tables and tally charts | | I interpret and talk about my data  I begin to use simple scientific language to identify and describe simple causal relationships  With help, I can say if my test was fair  I say if the relationship was what I expected |
|  |  | Plan | Do | | Review | |  | Plan | Do | | Review | |
| Lower Key Stage 2 | Observing over time | I talk about things changing and recognise when questions can be answered by observing over time  I decide what observations to make, how often and what equipment to use | I use a range of equipment to collect data using standard measures  I make records using tables and bar charts  I begin to use and interpret graphs produced by data loggers | | I draw simple conclusions from the changes I observed  I talk about changes using some scientific language  I suggest improvements to the ways I observe | | Upper Key Stage 2 | I decide when observing changes over time will help to answer my questions  I decide how detailed my observations need to be, and what equipment to use, to make my measurements as accurate as possible | I use equipment accurately without support  I record data appropriately  I present data in line graphs  I interpret changes in the data  I recognise the effect of changing the time and number of observations | | I draw valid conclusions from data about changes  I recognise the significance of things changing over time  I talk about and explain changes using scientific knowledge and understanding  I evaluate how well I observed over time | |
| Identifying and classifying | I talk about what criteria I will use to sort and classify things  I decide what equipment to use to identify and classify things  I talk about things that can be grouped and recognise when questions can be answered by sorting and classifying | I carry out simple tests to sort and classify according to properties or behaviour  I use Carroll diagrams, Venn diagrams and more complex tables to sort things  I use simple keys and branching databases to identify things  I make simple branching databases (keys) for things that have clear differences | | I draw simple conclusions about the things I have sorted and classified  I talk about the similarities and differences I identified using some scientific language  I suggest improvements to the way I sort and identify things | | I decide when identifying and classifying will be helpful to answer my questions  I decide what equipment, tests and secondary sources of information to use to identify and classify things | I use a series of tests to sort and classify materials  I use secondary sources to identify and classify things  I make my own keys and branching databases with four or more items  I use more than one piece of scientific evidence to identify and classify things | | I draw valid conclusions when sorting and classifying  I recognise the significance or sorting and classifying  I talk about and explain what I have done using scientific knowledge  I evaluate how well my keys worked | |
| Pattern seeking | I talk about where patterns might be found and recognise when questions can be investigated by pattern seeking  I decide on which sets of data to collect, what observations to make and what equipment to use | I use a range of equipment to collect data using standard measures  I make records using tables, bar charts or simple scatter graphs  I begin to use and interpret data collected through data loggers | | I draw conclusions about simple patterns between two sets of data  I talk about patterns using some scientific language  I suggest improvements to the way I looked for patterns | | I recognise when variables cannot be controlled and decide when pattern seeking will help to answer my question  I decide how detailed my data needs to be, and which equipment to use, to make my measurements as accurate as possible | I use equipment accurately to collect observations  I record data appropriately and accurately  I present data in scatter graphs and frequency charts  I recognise patterns in results  I recognise the effect of sample size on reliability | | I draw valid conclusions from data about patterns and recognise their limitation | |
| Research | I talk about how things are and the way they work and recognise when questions can be answered by research using secondary sources | I use information sources to find the information I need  I use someone else’s data  I record what I found out in my own words  I present information in different ways | | I draw conclusions from what I found out from different sources  I talk about what the information and data means using some scientific language  I suggest ways to improve how I find out and use information | | I decide when research using secondary sources will help to answer my questions  I decide which sources of information might answer my questions | I use relevant information and data from a range of secondary sources  I recognise how data has been obtained  I start to notice when information or data is biased or based on opinions rather than facts  I present my findings in suitable formats | | I draw valid conclusions from my research  I talk about and explain my research using scientific knowledge and understanding  I evaluate how well my research has answered my questions  I recognise that some scientific questions may not have been answered definitively | |
| Fair test | I talk about the links between cause and effect and (with help) pose a fair test question  I help to plan a fair test  I decide what data to collect  I decide what equipment to use and how to make observations | I use a range of equipment to collect data using standard measures  I make records using tables and bar charts  I begin to use and interpret data collected through data loggers | | I draw simple conclusions from my fair tests  I talk about, and explain, simple causal relationships using some scientific language  I suggest ways that I can improve my fair tests | | I recognise when variables need to be controlled and decide when a fair test is the best way to answer my question  I plan a fair test, selecting the most suitable variables to measure, change and keep the same  I decide what equipment to use to make my measurements as accurate as possible | I use equipment accurately to collect observations  I record data appropriately and accurately  I present data in line graphs  I identify causal relationships | | I draw valid conclusions based on the data  I recognise the significance of the results of a fair tests  I talk about and explain causal relationships using scientific knowledge and understanding  I evaluate the effectiveness of my fair testing, recognising variables that were difficult to control | |